

# MEMOIRS

O F

## LITERATURE.

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MONDAY, *August* 17. 1713.

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### ADVERTISEMENT.

**T**HES E Memoirs will come out for the Time to come  
the First Monday of every Month.

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#### I.

HISTOIRE de l'Academie Royale  
des Sciences. Année MDCCX.  
Avec les Memoires de Mathema-  
tique & de Physique, pour la mê-  
me Année. Tirés des Registres  
de cette Academie. A Paris,  
chez Jean Boudot, Imprimeur  
Ordinaire du Roy, & de l'Acade-  
mie Royale des Sciences, rue S.  
Jacques au Soleil d'or, proche la  
Fontaine S. Severin. MDCCXII.

That is, *THE HISTORY* of the Roy-  
al Academy of Sciences for the  
Year MDCCX. To which are ad-  
ded the Memoirs relating to Mathe-  
maticks, and Natural Philosophy, for

the same Year. Taken from the Re-  
cords of that Academy. Paris.  
MDCCXII. In 4to. pagg. 166,  
and 560.

**I**T is no small Advantage for the Mem-  
bers of the *Royal Academy of Sciences*, to  
have their *Memoirs* published Yearly by  
such a Polite and Ingenious Writer as Mr. de  
*Fontenelle*. He gives an Historical Account  
of their Performances; and that Part of the  
Work is always the most entertaining. This  
Volume contains the *History*, and the *Memoirs*  
of that Society for the Year 1710 †. It is  
but lately come to my Hands; which is the  
Reason why I have not mentioned it sooner.

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† I have given an Account of the foregoing  
Volume for the Year 1709. in the 1st Volume of  
these Memoirs, Numb. LXXII.



In order to make my Account of this Work more Methodical, I shall take notice of the most considerable Pieces inserted in it, as they are mentioned in the *History*; and I shall enlarge more or less upon some of them, according to the Nature of the Subject.

*Pieces relating to Natural Philosophy in general.*

I. The First Piece, mentioned under this Head, concerns the Elasticity of the Air. Mr. Carré undertook to verify some Experiments made by Mr. Parent, from which the latter inferred that the Air has no Elastick Virtue. The Author of this Piece shews, that those Experiments do not prove Mr. Parent's Assertion, and that the Air has an Elasticity. However he owns, that his Experiments occasioned new Difficulties: But, says Mr. de Fontenelle, Difficulties do continually start up in Matters relating to Natural Philosophy; and 'tis in vain to pretend that they may be wholly exhausted.

II. The next Piece runs upon Magnetical Variations. It contains an Account of Mr. Delisle's Observations concerning that Subject, which Ten Journals of long Voyages have afforded him.

III. In the Third Article, Mr. de Fontenelle gives an Account of some *Reflexions* of Mr. Cassini, Junior, upon the Observations of the Flux and Reflux of the Sea, made at Dunkirk, and at Havre de Grace, in 1701, and 1702. by Mr. Baert, and Mr. du Bocage, Professors of Hydrography. He also takes notice of the same Mr. Cassini's *Reflexions* upon the Observations of Tides made at Brest and Bayonne.

IV. Mr. de Reaumur has made several Observations upon the progressive Motion of Shell-fishes, which make the Subject of this Article.

V. The next runs upon some Experiments concerning the Effect of the Wind upon the Thermometer: They have been made by Mr. Cassini, Junior, and Mr. de la Hire, Junior.

VI. Among the various Observations contained in this Article, I shall only take notice of the following.

1. The late Bishop of Seez affirmed, that a Man of his Diocese, (whom he knew), of Ninety Four Years of Age, had married a Woman of Eighty Three, who was happily delivered of a Boy.

2. A Baker of Chartres put into his Cellar, which is Thirty Six Steps deep, and well vaulted, Seven or Eight Shovel-fulls of Live-Coals out of his Oven. His Son, a strong and lusty young Man, going down with a Candle in his Hand to carry other Live-Coals into it, the Candle went out in the Middle of the Stairs: He came up, and having lighted it again, went down. When he came into the Cellar, he cried out that he was almost choaked, and called for Help; and then was no longer heard. His Brother, as strong as he, went down immediately, cried out in the same Manner, and then left off crying. His Wife went down after him; a Servant-maid followed her; and it proved the same thing. Such a strange Accident put the whole Neighbourhood into a great Consternation; but no body cared to go down into the Cellar. At last a Neighbour more zealous and bolder than others, not believing that those Four Persons were dead, went down to give them his Hand, and help them to come out. He cried, and was no longer seen. A very lusty Man, who went by, asked for a grappling Iron to bring up one of those People without going down to the Bottom. He let down the grappling Iron, and brought out the Maid, who taking the Air, fetched a Sigh. She was immediately blooded; but the Blood did not come out, and she died upon the Spot.

The next Day a Countryman, who was a Friend to the Baker, said, That he would bring out all those Bodies with a grappling Iron; but for Fear of being taken ill without being able to come up again, he desired to be let down into the Cellar with Ropes upon a wooden Pulley, and to be brought up again, as soon as he should cry. He quickly cried; but as he was drawn up, the Rope broke, and he fell down again. The Rope which broke pretty near the upper Part of the Cellar, was tied again with all possible Speed; but he came out dead. His Body was opened. He had the Brain almost dried up, the Meninges extraordinarily stretched, the Lungs stained with Black Spots, the  
Guts



Guts swelled, and as big as a Man's Arm, inflamed and as Red as Blood, and what was most singular, all the Muscles of the Arms, Thighs, and Legs, as it were, separated from their Parts.

The Magistrate took Cognizance of that Accident, and ordered, That no body should go down into the Cellar, till the Physicians, Surgeons, and even Masons should be consulted about it. The Result of that Consultation was, That the Live-Coals which the Baker had put into the Cellar were not quite extinguished; that since there is a great deal of Salt-petre in all the Cellars of *Chartres*, a great Heat had raised in that Cellar a malignant Vapour, which had occasioned so many dismal Effects; that a great Quantity of Water should be thrown into the Cellar to put out the Fire, and bring down the Nitrous Vapour; which was executed. Some Days after, a Dog fastened to a Board with a lighted Candle was let down into the Cellar. The Dog did not die, and the Candle did not go out; which plainly shewed that the Danger was over. The dead Bodies were taken out, but so rotten by the Water, that they could not be dissected. They were very much swelled; and one of them had his Tongue out of his Mouth, as if he had been strangled. The *Academy* had this Story from Mr. de la Hire.

3. Count *Marfigli* has sent to the *Academy* a Manuscript entituled, *An Essay of Natural Philosophy upon the History of the Sea*, which he has dedicated to that Society. Having made a considerable Stay upon the Coasts of *Provence* and *Languedoc*, he betook himself particularly to study the Sea. He has formed a Design as vast as the Subject, and undertaken to make all the necessary Experiments. If we had, says Mr. de Fontenelle, a sufficient Number of such Memoirs made by Observators placed in different Parts of the World, we might have at last a Natural History.

*The History of the Sea*, composed by Count *Marfigli*, is divided into Five Parts. The First treats of the Disposition of the Bottom of the Sea. The Second, of the Nature of the Water. The Third, of its Motions. The Fourth of the Plants that grow in it. The Fifth, of Fishes. This last Part is not finished, and the *Academy* has seen nothing of it. The whole is attended with a great many Figures very carefully made.

In order to know the Nature and Disposition of the Coasts, the Author made several short Voyages in a Bark between the Cape of *Sisse* near *Toulon*, and the Cape of *Agde* in *Languedoc*. He made other Voyages into the open Sea, sometimes at the Distance of Eleven Leagues, to examine the Depth and Nature of the Bottom. He found that the *Gulph of Lyons* is cut into Two by a Coast lying under Water; that the Part which reaches from the Land to that Coast, is not above Seventy Fathom deep; and that the other Part towards the Main has a Depth of a Hundred and Fifty Fathoms in some Places, and is sometimes so deep that it cannot be fathomed. He calls it the *Abyss*. He enquired into the Conformation of the Soil, that is, into the Disposition of the different *Strata* of Earth, Sand, Rock, &c. not only in the Coast, but also in the Neighbouring Shelves and Islands. That Conformation proved the same; and therefore Isles are only Fragments of the firm Land, and probably the Bottom of the Sea is a Continuation of it. From whence it may be conjectured, as Count *Marfigli* observes, that the Globe of the Earth has a Determined and Organical Structure, which has not undergone great Alterations, at least for a considerable Time.

He shews, that Beds of Salt and Bitumen are interspersed between Beds of Stone, and that there is upon the Natural Bottom of the Sea, an Accidental one formed by a Mixture of different Matters, such as Sand, Shells, Mud, &c. which have been closely united together by the Glutinosity of the Sea, and are at last grown so hard, as to be sometimes petrified. Those Incrustations being necessarily made by Lays, there are some in which Fishermen can easily distinguish the Yearly Additions. They have a surprising Variety of Colours, which sometimes penetrate into the very stony Substance; but those Colours are generally superficial, and disappear out of the Water.

Some of the Matters, whereof those Incrustations consist, have afforded, by a Chymical Operation, Principles so like those of Sea Plants, that one might suspect them to be nothing else, the more because they are sometimes disposed like Filaments. They might be a hard Sea-Moss, or *Lichens* which stick to Stones, and are almost as hard.

It appeared to Count *Marfigli*, by a Thermometer sunk into the Water, that there is



an equal Degree of Heat at different Depths; that in the Winter the Heat is somewhat greater in that Sea than in the Air, and lesser in the Summer, but frequently equal. And yet Count *Marsigli* has also observed, that many Sea-Plants shoot again in the Spring, as well as Land-Plants, rather than in other Seasons. An Accident hindered Count *Marsigli* from going on with his Experiments upon the Heat of the Sea.

The Sea-Water, says he, if it be well chosen, is clearer and brighter than any other Water. As for its Colour, it depends upon the Nature of the Bottom, the Climate, and so many other Circumstances hitherto little known, that Count *Marsigli*, notwithstanding all his Experiments, is not yet satisfied with his Observations relating to that Head.

It is more easy to account for the Saltness and Bitterness of the Sea; for its Bitterness ought to be distinguished as a thing different from its Saltness. The one is produced by the Dissolution of the *Strata* of Salt, and the other by the Dissolution of the *Strata* of Bitumen.

Water is much more proper to dissolve Salt than Bitumen, which is an Oily Substance. And indeed the Dose of Salt in Sea-Water is much stronger than that of Bitumen. Count *Marsigli* having taken Twenty Three Ounces and Two Drams of Cistern-Water to make Sea-Water of it, put into it Six Drams of common Salt, and only Forty Eight Grains of Spirit of Pit-Coals; (for those Coals are Bitumen, and there are some Mines of them in the Mountains of *Provence*;) and with that Mixture he had an Artificial Sea-Water of the same Taste as the Natural. Those Forty Eight Grains did not increase the Weight of the Water weighed by the Areometer.

The small Quantity and Lightness of that Bituminous Matter are the Reason why Sea-Water distilled, and deprived of Saltness by Distillation, does not lose its Bitterness, and unpleasant Taste; nor even, as the Author pretends, a hurtful Quality. The Distillation naturally performed by the Sun, which is pretty different from that of an Alembick, does entirely clear Sea-Water of its Bitumen.

There are in the Earth so many different Matters washed by the Sea, that in all probability, Salt and Bitumen are not the only Principles that mix with it.

It appears from what has been said, that in Twenty Four Ounces of Sea-Water there are Six Drams of Salt, or, which comes to the same thing, that the Salt contained in it is the Thirty Second Part of its Weight. But this is only to be understood of the Water taken from the Surface of the Sea: The Water of the Bottom is more salted, and has the Twenty Ninth Part of its Weight of Salt. The Waters more salted are also more heavy. Those that are upon the Surface of the Sea, at the Mouth of the *Rhone*, are by a 323 Part lighter than the Waters which lie also upon the Surface at a greater Distance; and these are lighter still, than those that are at a greater Distance from the Land.

It is somewhat surprising, that the Sea-Water, which never wanted Salt, has not dissolved as much of it, as it was able to dissolve. By the Experiments of Count *Marsigli*, a Quantity of Sea-Water, which contains Six Drams of Salt, dissolves still Four Drams and a half, and the Artificial Sea-Water Five. He conjectures, that the Animals and Plants of the Sea consume Part of its Salt; that another Part vanishes into the Air; that the fresh Waters which it receives not only from Rivers, but from Springs in its Bottom, unsalt it also: But notwithstanding all these Conjectures, he does not pretend that the Difficulty is wholly removed.

He has conveyed Fourteen Pounds of Sea-Water through Fifteen Earthen Pots, which he has successively filled with Garden-Earth and Sea-Sand. If those Pots had been joined together, they would have made a Cascade Seventy Five Inches long, and Five broad. The Fourteen Pounds of Water going both through the Sand and the Earth, were equally reduced to Five Pounds Two Ounces; but they were better unsalted by the Sand, and lost a greater Part of their Weight. If the Cascade of Sand had been as long again, 'tis very likely they would have become almost insipid. Thus the Sea-Water might grow sweet, being filtrated through the Bowels of the Earth, if after a certain Time the Passages were not filled up with the Salt lying in them.

The Salt of Superficial Waters is White, and that of deep Waters is dark Ash-coloured. The former is the only one that has an Acidity; it is more biting, and less bitter. And



And therefore at *Peccais* in *Languedoc*, where they extract Salt out of deep Well-Waters, they must leave it exposed to the Air, at least for the Space of Three Years, before they can sell it; that Time being necessary to make that Salt lose a Bitterness, which would be intolerable. Mr. *de Fontenelle* omits a great many Observations upon Sea-Salt, because that Matter is better known.

Count *Marfigli* had not a sufficient Time to make the necessary Observations upon the Bitumen contained in Sea-Water. However, he believes that it occasions not only the natural Unctuousity of that Water, which remains even after a Distillation, but also the great Quantity of Glue which sticks to Stones and Plants, the Union of so many Heterogenous Bodies pasted, as it were, together, and the Tartar which hardens in some Places the Bottom of the Sea, or cleaves to several Sorts of Matter, especially to the Sea-Plants called *Lithophyta*. The Author began at several times to make Experiments upon the Tartarizations of the Sea; but he could not carry those Experiments as far as they wanted to be carried.

He has observed, that Pulse boiled in Sea-Water grows harder than it was before; that Mutton becomes whiter and more tender than in fresh Water, but very much salted and very bitter; that Bread made with Sea-Water is salted, and may be eaten whilst it is new, but when it grows stale, it has an excessive Bitterness.

The Sea has Three Sorts of Motion, the Flux and Reflux, the Currents, and Undulation. 'Tis well known, that the *Mediterranean* has no Flux and Reflux, at least in every Part of it; and indeed (says Mr. *de Fontenelle*) according to the common System it ought to have none, since it is not under the Way of the Moon. However, because a very small Flux and Reflux might easily have escaped the common Observations, Count *Marfigli* made new ones; but he could not perceive any Motion of that Nature.

He has discovered no regular Motion in the Currents, notwithstanding all his Application to find it out. He could not verify what is commonly said of that Famous Current †, which goes along the Shores of all

the *Mediterranean*, as if it was formed by the coming in of the Waters of the Ocean, and by their Return. But he has observed a thing very singular. During the Summer, and in the Time of fishing Coral, one may see upon the Coast of the *Abyss* a Current, that seems to have a Relation with the Motion of the Sun upon the Horizon, but in such a Manner as to be always opposite to it. When the Sun is in the Eastern Part of its Diurnal Course, that is, from its rising till Noon, the Current goes *Westward*; at Noon it turns *Northward*, and then *Eastward*. The Author does not say whether at Midnight it goes towards the *South*, which seems to be necessary.

As for what concerns the Undulation, Count *Marfigli* observed between *Maguelone* and *Peyrole*, that in a great Storm the Waves rose up to Seven Feet above the usual Level of the Sea. Along hilly Shores, like those of *Provence*, a furious Wind of *Lebesche* raises the Water only to Five Feet; but its Percussion against Rocks drives it sometimes to Eight. This is not comparable to Poetical Tempests, says Mr. *de Fontenelle*.

Count *Marfigli* divides Sea-Plants into Three Classes, *viz.* the Soft; those that are almost Wood; and the Stony.

The Soft are the *Alga*, the *Fucus*, the Sponge, the Sea-moss, &c.

The Plants that are almost Wood, are the *Lithophyta*, so called by the Ancients, because they looked upon them as stony Plants.

The stony Plants, which should properly go by the Name of *Lithophyta*, are Corals and *Madrepores*. Count *Marfigli* says nothing of some others, such as stony Mushrooms, because the Sea of *Provence* affords none.

The *Alga* is the only Sea-Plant that has a Root; and therefore it grows in a muddy Place, like Terrestrial Plants. All others, without any Exception, grow upon hard Bodies, such as Rocks, Shells, Pieces of Iron, Conglutinated Earth, Wood, and even other Plants, &c. and closely stick to them by their Foot. That Foot has no Fibres proper to draw Nourishment; and most of those Bodies to which it cleaves, cannot be thought to afford any. Count *Marfigli* believes, that all those Plants without a Root are Roots through their whole Substance, that is, they draw their Nourishment on all Parts through a vast Number of Pores, and

† A Description of that Current may be seen in the 1st Volume of these Memoirs, Num. LXX.



frequently of visible Holes, of which they are full. This Sort of Vegetation is well adapted to them, since they are surrounded on all Sides with the Sea-Water, which affords them their Nourishment; whereas the Terrestrial Plants, which receive their Nourishment from the Earth, and have but one Part inclosed in it, want to have that Part furnished with particular Organs. Hence it is that all Sea-Plants, as far as the Author was able to know their Structure with his Eyes, and with the Help of a Microscope, are only a Collection of Glandules, or small Tubes, which filtrate the Sea-Water, and separate from it the Juices necessary to them. They are generally glutinous and milky Juices.

If one Part of a soft Plant, or of a *Lithophyton*, lies in Sea-Water, it keeps fresh, whilst the other Part that is out of the Water dries up. The contrary happens to Terrestrial Plants, which keep fresh entirely, if they have but one Part dipping in Water. This shews, that the Communication observable between the Parts of Terrestrial Plants, is not to be found in Sea-Plants; and that the Parts of the latter are nourished independently one upon another, and by a certain *Apposition* of Matter to each of them in particular.

After this general Notion of Sea-Plants, Mr. de Fontenelle proceeds to several particular Observations made upon them by Count *Marsigli*; but I have already so much enlarged upon the Book of this Author, that I find it necessary to omit those Observations, and also his Chymical Operations upon Sea-Plants, especially upon Red Corals.

VII. Mr. de Fontenelle refers the Reader to the *Memoirs* for the following Pieces, viz. 1. *Observations concerning the Quantity of Rain, that fell at the Observatory of Paris, in the Year 1709. with the State of the Thermometer and Barometer.* By Mr. de la Hire. 2. *A Comparison of the Observations made at the same Observatory upon Rain and Winds, with those that have been made by the Marquis de Pontbriand at his Country Seat near St. Malo during the Year 1709.* By Mr. de la Hire. 3. *A Comparison of Mr. de la Hire's Observations with those of Mr. Scheuzer made at Zurich upon Rain, and the Constitution of the Air during the Year 1709.* 4. Mr. de Reaumur's

*Reflexions upon the new Discovery † of Spiders. Silk.*

I would insert here an Account of this last Piece, which is very Curious, were it not that I have already done it in the 1st Volume of these *Memoirs*, Numb. XL, and XLI.

### Anatomy.

I. The First Piece, mentioned under this Head, contains some Observations relating to *Pond-Muscles*. Would any one believe, says Mr. de Fontenelle, that there is an Animal, which receives its Nourishment, and breathes only through the *Anus*, which has neither Veins nor Arteries, in which there is no Circulation? It multiplies it self without the Help of any other Animal of the same Species, and is the Father and Mother of its Offspring. This is a Notion of an Animal quite new. 'Tis the *Pond-Muscle*, the Structure whereof has been unfolded by Mr. Mery, notwithstanding the Oddness and Singularity of its Figure.

I shall not give the Description of that Animal: I cannot enlarge upon every Part of this Work, that deserves it; and I suppose the Curious will have Recourse to the Book it self.

II. The next Piece concerns the Dilatation and Contraction of the Iris of the Eye, as they have been explained by Mr. Mery, in the History of the Academy for the Year 1704. Mr. de la Hire does not believe, that the Fibres of the Membrane *Iris*, which ought to be conceived like so many small Muscles, have an Action contrary to that of all other Muscles, that is, that they stretch themselves by swelling, and contract themselves by recovering their natural State. Mr. Mery undertakes to defend this extraordinary Hypothesis. The Question is only to know, whether the Fibres of the *Iris* are in their natural State, when they are dilated, or when they are contracted. In the first Case, the Apple of the Eye is less open; and in the other, it is more open.

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† An Account of that Discovery may be seen in the 1st Volume of these *Memoirs*, Numb. XX.



III. The Third Article consists of Ten Anatomical Observations. Here follow some of them.

1. Dr. Chomel has shewed to the Academy Twenty Two Stones newly found in the Body of a Lady of Fourscore Years, very strong for her Age, who died of an Apoplexy. They were formed in a Bag, which was but an Extension of the Membranes of the *Duodenum*, towards the upper Part of that Intestin. They were about Five or Six Lines in Diameter, almost equal, of a pretty regular Figure, &c. The Lady, who had those Stones, did not vomit; but Two Hours after her Meals, she felt a small Pain about the Place where the Bag lay.

2. Mr. Geoffroy, Junior, shewed a whole *Tenia*, Two Foot and a half long, which was found in a very sound and fat Tench, like those that have been discovered in Man; only with this Difference, that it was not divided into Rings. It had only Stripes or Folds perpendicular to its Length; and another large Stripe, reaching from the Head to the Tail, divided it into Two equal Halves. It does not appear, that any *Tenia* has been found in a Fish before.

3. A Nun had for the Space of Eighteen Years such a prodigious large Belly, that besides the Ligatures necessary to keep it up, Two Nuns, whenever she had a Mind to walk, were obliged to walk backwards before her, and to help her to carry her Burthen. At last she died at Forty Nine Years of Age in great Pain, and she was dissected. As soon as the Skin of the Belly was taken off, and before the Cavity was opened, a large Bag offered it self to the Sight, which began at the *Umbilicus*, and went down to the Knees. It was full of many different Bodies: Some looked like Soap-loaves, others like large Pieces of Flesh, others like Parcels of Plaster covered with some Membranes. There were also Three Bladders about a Foot long, containing partly an yellow Water almost oily, and partly some Matters as hard as a Stone. 'Tis to be observed, that between the Skin and the Muscles, which were almost entirely consumed with their common Teguments, they found many other small hard Stones, one of which

shot out Prickles not unlike the Rowel of a Spur. The Cavity of the Belly being opened, they found the Guts inclosed in another large Bag, sticking to the first *Vertebra* of the Loins. It contained several extraneous Bodies like the former, and Three or Four Quarts of yellow Water. The Diaphragm was very much compressed by that Bag, and the Heart almost flat. The Academy had these Particulars from Mr. Lemery: They are not so remarkable for the Nature of those Generations, says Mr. de Fontenelle, as for their prodigious Bigness.

4. Mr. de Fontenelle describes an Animalcule, never known before, and discovered by Mr. Carré. That Description is worth reading.

IV. The Historian of the Academy refers the Readers to the *Memoirs* for the Observations of Mr. Geoffroy, Junior, upon the *Bezoar*. A particular Account of those Observations deserves to be inserted here.

The first Stones known by the Name of *Bezoar*, were brought from the East. Since the Discovery of *America* we have had others imported from thence, which having almost the same Structure, and the same Virtues, go also by the same Name, only with this Difference, that the *Bezoar* which comes from the *Levant*, is called Oriental, and the other, Occidental. There are also other stony Substances taken from Animals, and consisting of several Lays, which have been called *Bezoar*, with the Addition of the Name of the Animal in which they are found. Such are the Stones called the *Monkey-Bezoar*, and the *Cayman-Bezoar*. Some taking the Word *Bezoar* in the Signification of Antidote and Counterpoison, have applied it generally to any Matter that has such a Virtue: Hence it is that this Name has been bestowed upon Chymical Compositions, viz. the *Mineral Bezoar*, and the *Jovial Bezoar*. Others have called the Powder of the Heart and Liver of Vipers, *Animal Bezoar*. The Name *Bezoar*, or *Bezoardick*, has been likewise bestowed upon some Powders, or Artificial Stones, in which there is an Ingredient of *Bezoar*. Such are the different *Bezoardick* Powders, the Powder of the Countess of Kent, the Stones formed of that Powder, and the *Goa-stone*. And because it has been observed, that the *Bezoar* consists of several Lays,



Lays, that Name is also given to a Sort of figured Stones to be found in several Parts of *America*, which are thought to have the same Virtues. Such *Bezoars* are likewise to be met with in *Italy* and *Sicily*, and even in several Parts of *France*, especially in *Languedoc*.

These are in general the different Matters known by the Name of *Bezoar*. But, properly speaking, the *Bezoar* is a stony Substance taken from some Animal, formed of several Lays, and which has some Virtue against Venom. The Two principal Sorts are, as has been already said, the Oriental and the Occidental. We know in general, that the *Bezoar* is to be found in the Stomach of a Kind of wild Goat, which feeds upon Aromatick Plants. If we may believe *Tavernier*, there are many such Stones in the same Animal. They are of different Figures and Sizes. Some look like a Kidney, or Kidney-bean: Others are round or oblong, or of an irregular Figure. Every Stone consists of a Greenish or Olive-coloured Matter with black Spots in the Inside. When they are broke, one may observe in them several Lays of a different Thickness, and sometimes of a different Colour. The Middle or the Center of that Stone is a hard, stony, and pretty smooth Body. The Lays which cover that Mass, are easily bruised between the Teeth, and stick to them like a Matter somewhat glutinous, that gives some Tincture to the Spittle. They quickly take Fire, and seem to contain Volatil Salt and Oil. The remaining Matter is like the *Caput mortuum*, that remains in the Retort after the Distillation of Animal Matters. Those Stones are generally very smooth, but sometimes a little rough, and like Shagreen in some places.

Mr. *Geoffroy* has opened a great many *Bezoars*, and found in the Middle of many of those Stones, not only Straws, Hair, Marcassites, Pebbles, and gravelly Matters united together, and as hard as a Stone; but also Talk, Wood, Fruit-stones not unlike those of Cherries, &c. The Author believes it is no easy thing to counterfeit the *Bezoar*, and that the Cheat, if there be any, may be perceived by the bare Sight.

The *Bezoar* seems to be produced in the following Manner. The solid and undigested Bodies above-mentioned, remaining in the Stomach of the Animal, may irritate the

Glands; and the *Lympha* thickened with the Ferment of the Stomach still full of the Juice of those Aromatick Plants, which the Animal has browsed, may form those smooth and thin Lays, which can hardly be imitated by Art.

Mr. *Geoffroy* observes, that the *Bezoar* has outwardly the Shape and Figure of the Body contained in the Middle, whatever it be. If it is a Straw, the *Bezoar* will be long: If it is a Pebble, the *Bezoar* will have the same Figure, and so with the rest. The Author makes some other Observations, which I omit.

There are various Opinions about the Animals, which produce the Oriental and Occidental *Bezoar*. It appears, that the Oriental-exported out of *Egypt*, *Persia*, *India* and *China*, is produced by a Sort of He-goat, called *Paxan* by the *Persians*, or by a wild She-Goat larger than usually, as nimble as a Stag, having its Horns bent towards the Back, and therefore called *Capricornus* by *Clusius*.

Mr. *Geoffroy* infers from the different Opinions of Authors about the Name and Figure of that Animal, that perhaps those Stones are to be found in several Sorts of Animals, and that every Author describes the Animal which he saw. The same Reason may serve to discover the Cause of the different Colours of the *Bezoar*.

The *American Bezoar* may easily be known by its Colour, which is more pale. It is sometimes Gray, and produced upon Extraneous Bodies, as the *Eastern Bezoar*.

The Fossil *Bezoars* are a Sort of Stones formed of several Lays: They have the Figure of the Animal *Bezoar*, and generally a gray whitish Colour; their Lays are pretty thin; they have no Smell, and are used for the same Diseases, as other *Bezoars*. *America*, as has been already said, affords a great many such *Bezoars*, as well as *Italy*, and several Parts of *France*.

V. Mr. *de Fontenelle* refers the Reader to the *Memoirs* for the Discovery of a New Insect, that lives upon Snails. I shall give an Account of that Discovery made by Mr. *de Reaumur*.

All the Species of Animals, says he, which make their Residence in other Animals, may be reduced to Two Classes. Either those Insects live upon the outward Surface of



of the Body of some Animal; such are Lice to be seen upon Quadrupeds, Birds, and even upon several other Sorts of Insects, as Flies, Hornets, *Scarabæi*, &c. Or those Insects live in the Body of some other Animal; and one may bring under this Class all the Species of Worms, which have been discovered by Dissection in the Bodies of several Sorts of Animals.

The new Insect, which Mr. *de Reaumur* has observed upon Snails, cannot belong to any of those Two Classes, as having something common to both: For sometimes it lives upon the outward Surface of one of the Parts of a Snail; and sometimes it retires into the Intestins of that Animal.

What we call the Collar or Ring of a Snail, is known to be that Part which surrounds its Neck: That Collar is very thick; and is almost the only Part of that Animal, that can be viewed, when it retires into its Shell. The Insects, mentioned by Mr. *de Reaumur*, are to be seen upon the Thickness of the Collar, and are always most visible, when the Snail is thus shut up in its Shell, though they may be observed in some other Circumstances. They may be plainly seen, without the Help of a Microscope: They are seldom at rest, moving almost continually, and with great Swiftmess: Which seems to be somewhat peculiar to them; for those Sorts of Insects have generally a slow Motion.

Though those Animals be never so small, they cannot ramble upon the upper Surface of the Body of a Snail, the Shell sticking too closely too it. But then they may travel into other Countries, into which they are freely admitted, whenever the Snail opens its *Anus*, which is also placed in the Thickness of the Collar. A Snail seldom comes out of its Shell without opening its *Anus*, and frequently opens it upon other Occasions. Those small Insects seem to expect impatiently that favourable Moment, when they have a free Entrance into the Intestins of the Snail: At least they quickly take hold of that Opportunity. They come to the Hole, and immediately sink into it, and go along its Coats; so that after some Instants none of them are to be seen upon the Collar.

Their Eagerness in getting into the Intestins of the Snail, seems to shew that they are better pleased there, than upon the Collar. How comes it then that they appear

upon it? Perhaps it is always against their Will; and one might think so from their continual Motion. But the Snail forces them to lodge upon the Collar, as often as it throws out its Excrements. Those small Insects must then come out, and be contented to walk upon the Collar. Whilst they ramble about, the Snail shuts up its *Anus*, and they must wait for the first Opportunity to get into it again.

What has been said, may be observed upon all Sorts of Snails, though more generally upon the large Garden-Snails; but there is a Sort of Snails, in which one may discover those Insects in the very Middle of the Intestins, by breaking a Piece of the Shell. The Transparency of the Snail's Skirt facilitates the Sight of those Animalcules; and they appear distinctly, whether they be at rest, or in Motion, as if they were viewed through a Glass.

Mr. *de Reaumur* adds, that those Insects are hardly to be seen in rainy Weather. He has often counted above Twenty upon the same Animal. They generally appear to the Eye of a very white Colour. A good Microscope is necessary to perceive their different Parts distinctly. They have a Trump, which probably they make Use of to suck the Snail. That Trump lies between Two small Horns, which they pull in or thrust out, as Snails do. Their Body is divided into Six Rings. They have Four Legs on each Side: Those Legs are furnished with long Hair, &c.

I shall give a further Account of this Work in the next *Memoirs*.

*The Booksellers are not so well provided with New Foreign Books, as they were formerly; and therefore it will not be improper to publish these Memoirs Monthly.*

## II.

A CONJECTURE about some Difficulties to be found in the first Chapters of *Cæsar's Commentaries*.



The following Conjecture about a considerable Passage in *Cæsar's Commentaries* is not new. It is to be found in the Annotations† of *Dionysius Vossius* upon those Commentaries. The Anonymous Author of these Remarks does not seem to have read the Notes of that Commentator. His Explication appears to me well grounded in general; and because he is more particular in proving it than *Vossius*, I shall not scruple to insert it here, as I find it in the *Memoirs of Treux*.

† Printed in 1697.

**C**ÆSAR tells us in the first Book of his *Commentaries*, That the *Helvetii* designing to go into *Gaul* through the Country of the *Allobroges*, he opposed their Passage by a Wall, or Intrenchment, which he caused to be made from the Lake *Lemane* to Mount *Jura*. Those who have enquired into the Situation of that Wall, are generally of Opinion, that it reached from *Nions* to Mount *Jura* near *Gingin*; and it has been said, that some Ruins of that Wall are to be seen near *Gingin* to this Day. But, according to that Supposition, *Cæsar's* Narrative will be unintelligible, and liable to several Difficulties, which deserve to be cleared. Here follow some of the most considerable.

1. It is not likely, that *Cæsar* should have gone so far into the Country of the *Helvetii*. He only says, that he came to *Geneva*. It appears from the Dates, that the Country adjacent to the Lake *Lemane*, and to the *Rhone*, was already full of *Helvetian* Troops going to meet upon the Banks of that River between *Geneva*, and the *Pas de la Cluse*. *Cæsar* would not have appeared before them in the open Field with an Army of Five or Six Thousand Men; much less could he have raised a Wall in the Presence of a Hundred Thousand Men. The *Helvetii*, a Warlike People, who hated the *Romans*, would doubtless have taken hold of that Opportunity to defeat them.

2. *Cæsar*, upon his Arrival, caused the Bridge of *Geneva* to be broke down: Nothing could have been more contrary to the Practice of War, supposing he had entered into the Country of the *Helvetii*; for he

would have cut off his Retreat, had he been beaten, or his Intrenchment forced. When an Army has a River behind it, the Bridges are always preserved; and they are never broke, but when the Troops have a Mind to intrench themselves beyond a River.

3. The following Words will be inexplicable. *Helvetii ea spe dejecti*, says *Cæsar*, after he had refused to grant them a free Passage, *navibus junctis, ratibusque compluribus factis; alii, vadis Rhodani, qua minima altitudo fluminis erat, nonnunquam interdum, sæpius noctu, si perumpere possent conati, operis munitione, & militum concursu, & telis repulsi, hoc conatu destiterunt*. It appears from these Words, 1. That the Entrenchment was attacked, without being forced. 2. That in order to attack it, the *Helvetii* were obliged to cross the *Rhone*. But according to the common Opinion, the Intrenchment must have been between the *Helvetii* and the *Rhone*, about Four or Five Leagues from that River; and therefore the *Helvetii* must have forced the Wall, before they could attempt to cross the *Rhone*.

4. *Cæsar* says there were only Two Ways to go from the Country of the *Helvetii* into *Gaul*; the one through the Country of the *Allobroges*, and the other through the *Pas de la Cluse*, the only Passage of Mount *Jura*, that was practicable for an Army. If it be supposed, that the Wall reached from *Nions* to *Gingin*, both Passages must have been stopped at the same time, as any one may see by consulting the Map. But this is contrary to *Cæsar's* Narrative; for having said, that he repulsed the *Helvetii* from his Intrenchment, he adds: *Relinquebatur una per Sequanos via*. And indeed this was the only Way they could go, after they had been disappointed.

This is sufficient to shew, that the common Explication contains many Contradictions, disfigures the First Chapters of *Cæsar's Commentaries*, and makes him begin his *Memoirs* in such a Manner, as to give an ill Opinion of his Performance. If that Author, in the very Beginning of his Book, had committed so many Faults about the Description of a Country, which might easily be known, what Credit could one give to the remaining Part of his Work? *Cæsar's* Com.



Commentaries are so much esteemed by all those who have any Taste, that it is worth one's while to remove those Difficulties. The following Conjecture will in my Opinion resolve them, and clear the whole Narration. To set it in a full Light, I shall trace the thing back to its Original, and follow the Historian gradually.

The *Helvetii* designed to go and settle in Gaul: To that end, there were only Two Ways: *Erant omnino*, says *Cæsar*, *duo itinera, quibus itineribus domo exire possent; unum per Sequanos, angustum & difficile inter montem Jura & flumen Rhodanum, quo (or qua) vix singuli ducerentur: Mons autem altissimus impen- debat, ut facile per pauci prohibere possent.* These Words do plainly point out the *Pas de la Cluse*; and indeed it was the only Way in Mount *Jura*, that a numerous Army, loaded with Baggage and Provisions, could go through. 'Tis true, there are some other Passages in Mount *Jura*; but they are so obstructed with Rocks and Precipices †, that they would have been impracticable to the Army of the *Helvetii*. The Rock near *Dochfeld* was not then cut through, since that Work is ascribed to *Julius Cæsar*. See upon this Head *Vigener's* Annotations on *Cæsar's* Commentaries.

The other Way to enter into Gaul was the Country of the *Allobroges*. *Alterum*, says *Cæsar*, *per Provinciam nostram, multo facilius atque expeditius; propterea quod Helvetiorum inter fines & Allobrogum Rhodanus fluit, isquo nonnullis locis vado transitur. Extremum oppidum Allobrogum est, proximumque Helvetiorum finibus, Geneva: Ex eo oppido pons ad Helvetios pertinet, that is, spectat.* This Way was more easy and commodious than the other, because the *Rhone* was fordable in many Places, and because the *Helvetii* might also have made Use of the Bridge of *Geneva*. Wherefore they resolved to steer their Course that Way, and to meet on the Banks of the *Rhone* the 28th of March. They went upon this Supposition, that they might prevail with the *Allobroges* to go through their Country, or force their Way through it, if the latter should attempt to oppose their Passage.

As soon as *Cæsar* was informed, that the *Helvetii* designed to enter into the Country

of the *Allobroges*, which made Part of the *Provincia Narbonensis*: *Cæsar* quum id nuntiatum esset, eos per Provinciam nostram iter facere conari: he set out from *Rome* to preserve the *Roman* Province from their Insults. It does not appear that he came upon any other Design; and he seems to have relied upon the *Sequani* for the Security of the *Pas de la Cluse*, whether he only intended to defend the Country belonging to the Republick, or whether he believed that the *Sequani* would secure the Passage of their Country for their own Interest.

When *Cæsar* arrived at *Geneva*, the *Helvetii* were already come to their Meeting, or at least in full March to come to it. Their Army consisted of about a Hundred Thousand Brave and Warlike Men; and the *Romans* had felt the Effect of their Valour upon other Occasions. *Cæsar* had then but one Legion, perhaps hardly compleat, which he found in that Country; and he expected some Militia of *Allobroges*. Wherefore his first Care was to break down the Bridge of *Geneva*, in order to prevent the Passage of the Enemies, and secure himself behind the *Rhone*. Thus he left the *Helvetii* Masters of all their Country to the Banks of that River.

As soon as the *Helvetii* heard that *Cæsar* was at *Geneva*, they tried to obtain a free Passage, and sent some Deputies to that General, to demand it in their Name, and to acquaint him with their Design. *Cæsar* did not think fit to grant their Request. In the mean while, that he might have a sufficient Time to get the Troops of the *Allobroges* which he expected, and to secure himself against the *Helvetii*, he told them that he would consider of it, and that they should come to him again the 12th of April. *Tamen ut spatium intercedere posset, dum milites, quos imperaverat, convenirent, legatis respondit, &c.*

*Cæsar* improved the Time, which he had taken to consider of the Matter: *Interea*, says he, *ea Legione quam secum habebat, militibusque, qui ex Provincia convenerant, a lacu Lemanno, qui in (or quem or qua in) flumen Rhodanum influit, ad montem Jura, qui (qua) fines Sequanorum ab Helvetiis dividit, millia passuum decem novem, murum, in altitudinem pedum sexdecim, fossamque perducit.*

After what has been said, no body can have any Doubts about the Situation of that Wall. We have seen that *Cæsar* was at *Ge-*

† *Ausonius* calls them *Invia Sequanorum*.



*neva*; that he caused the Bridge of that City to be broke down; that he could no longer enter into *Helvetia*, and would not have ventured upon it; and lastly, that he set out from *Rome* for no other Reason but to prevent the *Helvetii* from going through the Country of the *Allobroges*. To that end, nothing could be more natural, than to keep behind that River. Nay, *Cæsar* had so few Troops, that he could not have kept the *Rhone* for the Space of Nineteen Miles, unless he had strongly fortified himself. Wherefore he caused a Wall, or rather an Intrenchment †, to be made, which reached from the lower End of the Lake *Lemane*, (where its Waters come out and form the *Rhone*, that is, near *Geneva*,) to Mount *du Vaache*, which makes Part of Mount *Jura*, and towards that Part of that Ridge of Mountains, where is the Frontier and Passage of *Helvetia* into *Sequanua*. Some Observations ought to be made upon this.

1. (*The first Observation of the Author may be omitted: He reads, a lacu Lemanno, quâ in flumen Rhodanum influit.*)

2. *Ad montem Juram*. Those Words may be understood of Mount *du Vaache* on the South of the *Rhone* over against the *Pas de la Cluse*. That River runs between Mount *du Vaache* and Mount *Jura*, and between Rocks whereby those Two Mountains are united, so that the *Vaache* seems to be a Continuation of Mount *Jura*. *Cæsar* might therefore call them both by the same Name; and there is nothing in the Ancients, that can make us believe the contrary.

But the Word *ad* may be also translated, *towards the End of Mount Jura*. That Mountain was very well known: The *Rhone* is very narrow in that Place; and therefore the Intrenchment was not perhaps Twenty Paces distant from the Mountain on the other Side of that River. *Cæsar* could not therefore more properly denote the Place, where his Intrenchment ended, than by saying it was towards the Extremity of Mount *Jura*.

† See *Hottoman upon Cæsar's Commentaries*, who endeavours to prove that it was an Intrenchment of Earth and Wood, *Maceria*; which is very probable.

3. *Ad montem Juram, qui fines Sequanorum ab Helvetiis dividit*. This is an useless Repetition of what he had said before, and contrary to the Nature of *Cæsar's* Style, which is very concise. And therefore I had rather read, *quâ fines*, &c. which might signify towards that Part of Mount *Jura*, where is the Passage and Frontier of the *Sequani* and *Helvetii*.

4. The Intrenchment reached Nineteen Miles; but it could not have such an Extent in any Part of the Country situated on the North of the Lake: The greatest Distance from the Lake to Mount *Jura* can hardly amount to Ten Miles. And therefore *Cluverius* pretends, that the Word *Decem* crept into the Text; but not to say that this is a precarious Supposition, he cannot find the requisite Distance in the Place where he believes the Wall stood, that is, between *Nions* and Mount *Jura*; for that Distance does not exceed Four or Five Miles. But the Length of that Intrenchment does perfectly agree with my Conjecture; for some able Men have very carefully taken the Distance from *Geneva* to the *Pas de la Cluse*, and found it to consist of Four Leagues, reckoning Twenty in a Degree, which make Fifteen Roman Miles: And because the *Rhone* has several considerable Windings, if we take in those Windings †, there is somewhat above Five Leagues, which makes exactly Nineteen Miles. This Remark alone is, I think, sufficient to prove my Hypothesis. *Cæsar's* Intrenchment began therefore at the Lake *Lemane* near *Geneva*, and going along the Windings of the *Rhone*, ended at Mount *du Vaache*.

*Cæsar* fortified his Intrenchment with a very large Ditch, and several Towers; besides, he had the *Rhone* before him; and

† These Windings have been exactly measured by Mr. *Facio de Duillier*, the Eldest, in his Map made in 1699. He found the Windings of the *Rhone*, from the Lake to that Part which is over against the *Pas de la Cluse*, to be somewhat above Fifteen Minutes of a Degree of the Terrestrial Globe; which amounts to the Measure just now mentioned, a little above Five Leagues, or Nineteen Miles.

there-



therefore he found himself strong enough to repulse the *Helvetii*: *Si vim facere conarentur, says he, prohibeturum ostendit.* And then he adds: *Helvetii ea spe dejecti, &c.* This Passage, which is inexplicable according to the common Opinion, is easily understood by my Conjecture, and appears to me a demonstrative Proof of the Truth of it.

The *Helvetii*, says *Caesar*, being denied a free Passage through the Country of the *Allobroges*, resolved to force it. To that end, they endeavoured for several Days to cross the *Rhone* with the Help of Boats and Fords, sometimes with open Force, and sometimes by Surprise; but they were constantly repulsed from the Intrenchment, *operis munitione & telis repulsi*, so that they gave over that Enterprize.

In this Extremity, the *Pas de la Cluse* was the only Way left for their Migration: *Relinquebatur una per Sequanos via, qua Sequanis invitis propter angustias ire non poterant.* This Passage is also very difficult, if we follow the common Opinion; but my Conjecture makes it very plain. The *Helvetii* being discouraged by the ill Success of their Attacks, found themselves obliged to go through the *Pas de la Cluse*. It was an easy thing for the *Sequani* to oppose their Passage; and therefore the *Helvetii* betook themselves to a Negotiation. In order to it, they made their Application to *Dumnorix*, a powerful Man, who had a great Interest with the *Sequani*. By which Means they obtained Leave of going through their Country, but upon Condition that they should make no Devastation in their March.

*Caesar*, being informed of the new Design of the *Helvetii*, left *Labiennus* in his Intrenchment to secure the Country of the *Allobroges*, and went into *Italy* to get new Troops, that he might be able to prevent the IncurSION of the *Helvetii* into other Parts of the *Provincia Narbonensis*. He did not undertake to secure the *Pas de la Cluse*, either because he found it impossible, being on the other Side of the *Rhone*, or because he did not much care to defend the *Sequani*. *Caesar* returned some Time after with Five Legions, and removed from the Country of the *Allobroges* into that of the *Segusiani*†, where he remained only to observe the March of the *Helvetii*, and to

prevent their coming into the Territories of the Republick.

In the mean time, the *Helvetii* went through the *Sequania*, and began to ravage the Country of the *Aedui*. The latter not being able to defend themselves, sent Deputies to *Caesar*, and implored his Assistance. The Deputies endeavoured to make a moving Speech, called themselves Friends to the Roman People, and said, It was a shameful thing for *Caesar* to suffer their Country to be ransacked, and their Children to be taken away in the Presence of a Roman Army. On the other hand, the *Allobroges*, who inhabited on the Western Side of the *Rhone*, were forced to run away from their Country, and came to *Caesar* for Relief. *Quibus rebus adductus Caesar, non expectandum sibi statuit, dum omnibus fortunis sociorum consumptis, in Santones Helvetii pervenirent.* After he had secured the *Allobroges* on the Eastern Side of the *Rhone*, his only Design had been to prevent the Irruption of the *Helvetii* into the other Territories of the Republick, and he seemed to be resolved to be a mere Spectator of the Disorders, which the Enemies should commit elsewhere, without much caring for the *Sequani* and *Aedui*; but the Speech of the latter, the Consideration he had for the *Allobroges* of the Western Side of the *Rhone*, and new Reflexions made him alter his Mind:

I shall not dwell longer upon *Caesar's* Narrative: What I have said is sufficient to shew, that if my Conjecture be admitted, the whole Narration will be clear and coherent. It seems to me, that no considerable Objection can be raised against this Hypothesis. I have taken Care to prevent, in several Parts of my Remarks, every thing that might be objected. Some will object the Ruins near *Gingin*; but it cannot be proved, that they are the Remains of that Wall, rather than of some other Building. What is said of those Ruins should be made out by some Ancient Inscription. Besides, those pretended Ruins are not to be seen: The Curious who looked for them, could not find any Trace of them; and perhaps they never existed, but in the Imagination of those, who did not understand this Passage. *Thus far the Author of these Remarks.*

They are attended with a Map, which I would have inserted here, if I was enabled to make any extraordinary Expence. The Readers may consult the Annotations of *Dionysius Vossius*, who, as

I have

† Now the *Lyonnois* and *Forez*.



*I have already said, explains the Passage of Cæsar in the same manner. I designed to add some Observations of my own to the Author's Remarks; but I rather chuse to take notice of the following Book.*

### III.

THREE PHYSICO-THEOLOGICAL DISCOURSES, concerning, I. *The Primitive CHAOS, and Creation of the World.* II. *The general DELUGE, its Causes and Effects.* III. *The Dissolution of the WORLD, and future Conflagration. Wherein are largely discussed, the Production and Use of Mountains; the Original of Fountains, of formed Stones, and Sea-fishes Bones and Shells found in the Earth; the Effects of particular Floods, and Inundations of the Sea; the Eruptions of Vulcano's; the Nature and Causes of Earthquakes. Also an Historical Account of those Two late remarkable ones in Jamaica and England. With practical Inferences.* By JOHN RAY, late Fellow of the Royal Society. *The Third Edition, Illustrated with Copper-Plates, and much more enlarged than the former Editions, from the Author's own MSS.* London: Printed for William Innys, at the Prince's Arms in St. Paul's Church-yard. MDCCXIII.

THOUGH the bare Title of the Third Edition of this Book is sufficient to raise the Curiosity of those, who have not read it, I shall give a general Notion of it in a few Words. Mr. Ray treats of the Creation; of the Deluge; and of the Dissolution of the World: Three of the greatest Objects, that can take up the Thoughts of a Philosophical Mind.

I. In the First Discourse, the Author quotes the Testimonies of the Ancient Heathen Writers concerning the *Chaos*. He undertakes to prove, that the Creation of the World out of a *Chaos*, is not repugnant to the Holy Scripture; and then he shews, how the Land and Water were separated, and Mountains raised up. He discourses of the Equality of the Sea and Land, the Use of Mountains, &c.

Afterwards the Author proceeds to the Creation of Animals. He asserts, that God did at first create either the Seeds of all Animated Bodies, and dispersed them over all the Earth; or the first Set of Animals themselves, in their full State and Perfection, and gave them a Power to propagate their Kind. He examines this Question, *Whether all the Animals, which have existed hitherto, and shall exist hereafter, were at first actually created by God; and answers two Objections against that Doctrine.*

II. In the Second Discourse, Mr. Ray mentions several Testimonies and Traditions of the Heathens relating to the Deluge; and endeavours to explain the Causes of that Universal Inundation. He occasionally discourses of the Original of Fountains. Afterwards he treats of the Effects of the Deluge in general; of formed Stones, Sea-shells, &c. found under Ground at a great Distance from the Shores; and enquires whether they were brought thither by the Waters of the Deluge. In the last place, he specifies the Alterations that have been made in the Surface of the Earth since the general Flood.

III. In the Third Discourse, Mr. Ray having mentioned the Testimonies of Scripture, of the Ancient Fathers, and of some Heathen Philosophers, concerning the Dissolution of the World, enters upon a large Discussion of these following Questions. 1. *Whether there is any thing in Nature, that can probably cause or argue a future Dissolution?* 2. *Whether that Dissolution shall be effected by natural or extraordinary Means?* 3. *Whether it will be gradual and successive, or momentaneous and sudden?* 4. *Whether there will be any Signs or Forerunners of it?* 5. *At what Period of Time shall the World be dissolved? And particularly,*



larly, Whether it will be at the End of Six Thousand Years? 6. How far that Dissolution shall extend? 7. Whether the whole World shall be consumed and destroyed, or

annihilated, or only refined and purified? Lastly, the Author draws some practical Inferences from that Doctrine.

## PALERMO.

FATHER *John-Maria Amati* will shortly publish the Provincial Council held at *Palermo* in the Year 1388.

The same Author has almost finished the History of the Coins of *Sicily*. He treats of the most Ancient *Sicilian* Coins; of the *Cartbaginian*, *Roman*, *Byzantin*, and *Saracen* Coins, which have been current in *Sicily*; of those that have been stamped there under the *Norman* Kings, and under the Princes of the Houses of *Suabia*, *Anjou*, *Arragon*, and *Austria*, and under *Philip V.* That History will exhibit many Medals unknown to *Paruta*, and to *Leonardo Agostino* and *Francis de Seine*, who have enlarged the Work of *Paruta*.

## NAPLES.

THE History of this Kingdom, written in *Latin* by Father *Parthenio Giannetassi*, a Jesuit, is come out; but the Fourth Volume, which begins with the Year 1583. and reaches to this present Time, is not yet published. The Author has pre-

fixed to the Second Volume a Critical Preface upon all the *Neapolitan* or Foreign Historians, who have treated the same Subject.

## PARIS.

THE Fifth Volume of the *Annals* of the Order of *St. Benedict*, composed by the late Father *Mabillon*, has been lately published.

*Annales Ordinis Sancti Benedicti Occidentalium Monachorum Patriarchæ, in quibus non modo res Monasticæ, sed & cum Ecclesiasticæ Historiæ non minima pars continetur. Autore Domno Joanne Mabillon, Presbytero & Monacho ejusdem Ordinis, à Congregatione Sancti Mauri. Tomus quintus, complectens res gestas ab anno Christi M.LXVII. ad annum M.CXVI. inclusive; cum Appendice & Indicibus necessariis. Paris. 1713. In Folio, pagg. 830.*

THE following Book is also lately come out.

*Harangues sur toutes sortes de Sujets, avec l'art de les composer. Par sen M. de*



de Vaumoriere. Dédicées à feu Monseigneur le Chancelier Boucherat. Troisième Edition, augmentée depuis la mort de l'Auteur, d'une Dissertation sur les Oraisons funebres, par M. l'Abbé du Farry, & d'un grand nombre de nouvelles Harangues. Paris. 1713. In 4to. pagg. 808.

## P A R I S.

**F**Ather de Montfaucon has published at last what remains of Origen's Hexapla.

*Hexaplorum Origenis quæ supersunt, multis partibus auctiora, quam à Flaminio Nobilio, & Joanne Drusio edita fuerint. Ex Manuscriptis & ex editis Libris eruit & Notis illustravit D. Bernardus de Montfaucon, Monachus Benedictinus, à Congregatione S. Mauri. Accedunt Opuscula quædam Origenis anecdota, & ad calcem Lexicon Hebraicum ex Veterum interpretationibus concinnatum, itemque Lexicon Græcum, & alia, quæ præmissus initio laterculus indicabit. Paris. 1713. Two Volumes in Folio, pagg. 708, and 636.*

## L O N D O N.

**D**R. Whitby has published a Third Edition of his *Ethicks* enlarged.

*Ethices Compendium, in usum Academicæ Juventutis. Authore Daniele Whitby, S. T. P. Auctius & emendatius tertio editum. Londini Impensis Gul. Innys, ad Insignia Principis, in Area Boreali D. Pauli. 1713. In 8vo. pagg. 299.*

## A D V E R T I S E M E N T.

**T**HE Amsterdam-Edition of Dr. Bentley's *Horace* (mentioned above, pag. 203.) is to be had at Mr. Paul Vaillant's in the Strand.

**T**H E S E Memoirs are to be had of Mrs. Dodd and Mrs. Bolter, at Temple-Bar; and of Mrs. Bond and Mrs. Bolter at Charing-cross.

L O N D O N: Printed by J. Roberts: And Sold by A. Baldwin, near the Oxford-Arms in Warwick-Lane. (Price 6 d.)